

REMARKS

Claims 1-27 are pending in the present application. In the Office Action mailed November 03, 2005, the Examiner rejected claims 1-27 under 35 U.S.C §103(a) as being unpatentable over Luo (USP 5,856,647) in view of Raney et al. (USP 4,967,055).

In rejecting claims 1-27 under 35 U.S.C. §103(a) as unpatentable over Luo in view of Raney et al., the Examiner maintains that “Lou teaches the basic torch, as claimed, but does not teach combining multiple torch elements into an integral element for ease of parts replacement.” The Examiner further asserts that “[a]s set forth in column 7 in Raney in the prior rejection, the electrode, tip/nozzle and skirt cup can be nested and connected to the torch as an assembly.” Applicant does not necessarily disagree that the plurality of consumable components of Raney et al. are nested prior to being attached to a torch, however, that is not what is claimed in the present application.

The Examiner maintains that “[i]t is clear that since Luo teaches the basic torch structure claimed in the instant invention, and since Raney et al teach [sic] as specified above that combining multiple; [sic] torch elements into larger integral components is beneficial, the Examiner submits that one of ordinary skill in the art would; [sic] find it well within that level of ordinary skill to combine multiple torch components into integral ones.” In essence, the Examiner concludes that because Raney et al. discloses combining torch parts into unitary assemblies, one of ordinary skill in the art would then suddenly find forming a one-piece assembly of any of the components of the torch obvious thereover. Applicant respectfully disagrees. Raney et al. merely discloses an electrode with an integral cooling tube and a swirl ring connected to a nozzle. Such an assembly is not what is called for in the present claims.

As the Examiner is well aware, in order to establish a *prima facie* obviousness rejection, one requirement is that the combined references include all of the elements of the claimed invention. Even combining the references, the combination of references do not include each and every element of the claims as required to establish a *prima facie* obviousness rejection. Claim 1 calls for, in part, a plasma torch consumable assembly having a tip integrally connected with a shield cup and an electrode to form **a one-piece assembly** wherein the tip is constructed to secure the one-piece assembly to a torch body. Such is not disclosed in either reference, and therefore, is not disclosed in the combination. Claim 12 calls for in part, **a one-piece consumable assembly** which includes an electrode and a tip

fixedly connected to a cap wherein the tip and constructed to snap-fit the consumable assembly to the torch. Claim 14 defines a replacement plasma torch consumable kit wherein at least two of a shield cup, an electrode, and a tip are press-fit to one another. Claim 22 calls for a method of manufacturing a plasma torch consumable assembly which includes, in part, the step of integrally connecting an electrode within a perimeter of a tip in a single unitary consumable structure. Each of these independent claims specifies a plurality of components, which of those components are connected, and how those component are connected. The art of record simply does not teach or suggest that which is called for in the present claims. There is no suggestion to combine the components as is done in these claims.

Raney et al. teaches (1) a two part electrode assembly, (2) a swirl ring that is attached to a nozzle, and (3) three distinct and separate electrode, tip, and nozzle elements. This is not what is claimed. Raney et al. states that “[t]he invention includes three separate and distinct elements: (1) an electrode having an integral, hollow, interior cooling tube, (2) a tip element with an integral swirl ring, and (3) a nozzle.” Col. 3, lns. 11-14. Raney et al. further states that “[i]f the operator fails to include the tip element with the integral swirl ring when re-assembling the torch, the electrode will be driven by the force of the inlet gas to the base of the nozzle when the trigger is depressed.” Col. 3, lns. 23-27. That is, Raney et al. does not teach or suggest a one-piece or unitary consumable assembly as claimed and, in fact, Raney et al. expressly states that electrode, tip and swirl ring, and nozzle are “three **separate and distinct** elements.” This express disclosure cannot simply be ignored. Raney et al. therefore teaches away from the present invention. Applicant does not necessarily disagree that Raney et al. discloses interconnected elements of a consumable assembly or that the separate elements of the consumable assembly are to be nested when attached to a torch. Again, however, this is not what is claimed.

The Examiner’s conclusion that one of ordinary skill in the art would be motivated to provide a one-piece assembly as presently claimed directly contradicts the express disclosure of Raney et al. that the (1) electrode, (2) the tip and swirl ring, and (3) the nozzle are three separate and distinct elements of the assembly. It is this disclosure that indicates the references inability to teach or suggest that which the Examiner alleges it does. Raney et al. discloses that the elements called for in the present claims as a one-piece or unitary consumable assembly are three separate and distinct elements. Raney et al., even in combination with Luo, does not disclose, teach, or suggest a one-piece or single unitary

consumable assembly as called for in the present claims. Accordingly, the art or record does not teach, suggest, or disclose each and every element as called for in the present claims and as is required to support a rejection under §103. As such, the Examiner has not established a *prima facie* obviousness rejection of the present claims.

Further, the present invention and Raney et al. are alternatives to one another. That is, wherein Raney et al. prevents operation of the plasma torch when the consumable assembly is improperly connected thereto, Applicant's claimed invention prevents the improper assembly of the consumable components and the improper connection of the consumable assembly to the torch. Raney et al. states that "[t]he present invention has a unique safety feature which results from the stacking and nesting configuration of the three-part front end assembly 50" and that the "nesting arrangement creates a stacked configuration in the front-end assembly which adds an additional measure of safety in the event an operator fails to properly re-assemble the torch in the field." Col. 7, lns. 37-53. Raney et al. continues, "[i]f an operator is replacing one or more worn parts in the field, it is possible to omit one or more parts during re-assembly." Col. 7, lns. 53-55. Raney et al. expressly discloses that none of the tip, the electrode, and the shield cup are integrally connected as called for in the present claims and further discloses that in-field assembly of the nested consumable assembly is allowed even with omission of one or more of the parts of the assembly. Such an event simply cannot occur with the one-piece or unitary assembly of the present invention. The present invention is an improvement over Raney et al. Whereas Raney et al. disables operation of the torch system when the consumable assembly is improperly connected thereto, the present invention prevents this scenario from occurring all together.

Not only does the combination of the references fail to teach, suggest, or disclose each and every element as called for in the present claims, as is required to establish a §103(a) rejection, the Examiner's analysis of why the present claims are unpatentable thereover is also contrary to several tenets of patent practice as set forth in the MPEP. First, although admittedly not dispositive, Raney et al. was issued over 15 years ago. The failure of the Examiner to uncover any reference which discloses, teaches, or suggests, over the 15 years of development since Raney et al., a one-piece assembly which includes at least two of the electrode, the nozzle, and the tip, evidences the non-obvious nature of Applicant's invention. That is, persons of ordinary skill in the art having been in possession of the

disclosure of Raney et al. for over 15 years prior to the present invention, wouldn't a prior art reference be discoverable that minimally showed a unitary consumable assembly comprising at least two of a shield cup, an electrode, and a tip? The Examiner's conclusion that it would have been obvious to one of ordinary skill in the art to modify the disclosure of Raney et al. to form the claimed invention is nothing more than the impermissible "obvious to try rationale" as articulated in MPEP §2145.X.B. That is, rather than teaching or suggesting each and every claim limitation as those limitations are set forth in the claim, the rejection posits that, since Raney et al. teaches combining selected components of the assembly, it would be obvious to one of ordinary skill in the art to try to combine any of the other components of the assembly. Such an interpretation is expressly prohibited by MPEP §2145.X.B.

Second, the Examiner's interpretation of that which is taught or suggested in the art of record completely disregards the "as a whole" requirement as stated in MPEP §2141.02.I. Therein, it is stated that "In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious." (Emphasis in original). Under the guidance provided in MPEP §2141.02.I, Applicant has provided a solution to a problem – i.e. preventing the connection of an improperly assembled consumable assembly with a torch, whereas Raney et al. prevents operation of the torch but does not prevent the connection of the improperly assembled consumable assembly with the torch. That which is prevented by the assembly of the claims is expressly permitted by the assembly of Raney et al. The conclusion that that which is called for in the present claims is obvious in light of Luo in view of Raney et al. requires complete disregard for that which is expressly disclosed in Raney et al. and requires disregard of the "as a whole" requirement of MPEP §2141.02.I.

The art of record does not teach, suggest, or disclose the specific component parts connected as claimed to form the one-piece or unitary assembly. The Examiner's conclusion that the references teach or suggest that which is claimed is not supported by the references.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-27.

Applicant appreciates the Examiner's consideration of these Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,

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